REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in view of the following discussion is respectfully requested.

Claims 1-56 are presently active in this case, Claim 1 amended by way of the present amendment.

In the outstanding Official Action, the Restriction Requirement was made final and Claims 39-56 were withdrawn from consideration; Claims 1-18 and 20-38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,762,849 to Rulkens in view of U.S. Patent Publication U.S. 2004/0069225 to Fairbairn et al.; and Claims 1-38 were rejected for double patenting over U.S. Patent Application 10/674,703.

First, Applicants wish to thank Examiner Coleman for the November 17, 2005 interview at which time the outstanding issues in this case were discussed. During the interview, Applicants presented amendments and arguments substantially as indicated in this response. While no agreement was reached, Examiner Coleman indicated that such arguments would overcome the rejections of the outstanding Office Action.

Turning now to the merits, Applicants' invention is directed to a method of monitoring the status of a system component in a batch processing system. As described in the background section of Applicants' specification various parts of a processing system can include consumable or replaceable system components. Such components can be cleaned or replaced after detrimental processing conditions are detected, or according to a fixed time schedule. However, these maintenance approaches frequently result in overdue or premature cleaning or replacement of the consumable system components, resulting in degradation of process performance. Further, cleaning of the consumable parts and conditioning of the chamber having such parts is typically done for a fixed time period, which may be premature or unnecessarily long. Applicants' invention allows *in situ* monitoring of a system

in a batch type processing system in order to provide more accurate determination of maintenance and conditioning requirements.

For example, as shown in exemplary Figure 2a, light 223 from a light source is made incident on the system component 200, and light transmitted (221) and reflected (225) from the deposited film 210 is detected. As shown in Figure 2b, the transmitted light 222 and reflected light 226 changes intensity when the material deposit 210 is not present. This provides a mechanism for determining a state of the deposited layer based on threshold light intensities as shown in Figures 7a-7c. As discussed in the November 17th interviews, Applicants' Claim 1 is amended to clarify the role of the material deposit in the monitoring process. Specifically, Applicants' Claim 1 recites a method of monitoring status of a system component in a process chamber of a batch type processing system, the method including exposing a system component of the batch type processing system to light from a light source. Also recited is monitoring interaction of the light with the system component to monitor a state of a material deposit on the system component in order to determine a status of the system component.

In contrast, the primary reference to Rulkens discloses a system for measuring the thickness of a film deposited on a substrate. As seen in Figure 5 cited by the Official Action, the process chamber 32 of Rulkens includes a radiation source 100 for injecting an optical signal into the process chamber. The optical signal is made incident on the substrate 20 and reflected from the substrate to be incident on the interior walls of the process chamber 32. According to Rulkens the interior walls of the process chamber have roughened surfaces that cause light reflected from the wafer to diffusely reflect off the chamber wall such that the light can be collected at a view port 40. The analysis tool 110 collects the light and detects a thickness of the film deposited on the substrate based on the collected light. Thus, Rulkens discloses monitoring the thickness of a deposited film on a substrate, and not monitoring the status of a system component as required by Claim 1 of the present application. Indeed,

Rulkens does not mention the problem of monitoring and maintaining system components at all. As discussed in the November 17th interview, a substrate work piece for processing in the chamber is not a system component.

The cited reference to Fairbairn et al. is cited only for its teaching of a batch processing system in general. Moreover, this reference does not disclose any optical monitoring system, and thus cannot correct the deficiencies of Rulkens. Thus, Applicants' independent Claim 1 patentably defines over the cited references. As dependent Claims 2-38 depend from Claim 1, these claims also patentably define over the cited references. Nevertheless, Applicants note that dependent Claims 2-38 provide additional bases for patentability of these claims over the cited references.

Specifically, Claims 2-8 and 29 each recite details of the system component that is exposed and monitored in accordance with Claim 1. As neither Rulkens nor Fairbairn et al. disclose monitoring a system component, the cited references also do not disclose the details of a monitored system component as recited in Claims 2-8 and 29. Further, Claims 30-32 relate to monitoring the system component based on light transmittance, and Claims 33-35 relate to monitoring the system component based on light reflectance. Again, as the cited references disclose only monitoring a substrate, these references are silent with respect to reflected or transmitted light from a system component in order to monitor the status of such component. Still further, Claim 38 relates to purging optical components of the monitoring system in order to minimize the deposits on such system. The cited references are also silent with respect to these claims. Thus, the dependent claims provide a further basis for patentability over the cited references.

Finally, Applicants respectfully traverse the double patenting rejection of Claim 1 based on co-pending and commonly assigned application 10/674,703. Specifically, the '703 application relates to monitoring a system component based on the release of a reactant gas

during a semiconductor process. However, the signal intensity referred to in this application is a light absorption signal or mass signal from an erosion product of the component[1] and not transmitted or reflected light from the component. Thus, Claim 1 of the '703 application recites exposing the system component to reactant gas that can etch the system component to form an erosion product, and monitoring for release of the erosion product to determine the status of the system component. However, the claims of the '703 application do not relate to providing light from a light source and monitoring interaction of the light with the system component to determine a status of the system component as required by Applicants' claims in the pending application. Therefore, as discussed in the November 17th interview, the double patenting rejection should be withdrawn.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application and the present application is believed to be in condition for formal allowance. An early and favorable action is therefore respectfully requested.

Respectfully submitted,

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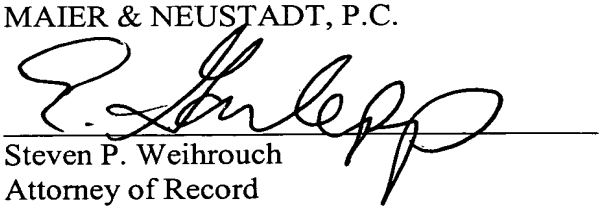

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[1] See paragraph [0056].